

race transverse trituberculato; elytris punctato-striatis, singulis trifasciculatis.

Hab. Aru.

Oblong-ovate, pitchy, covered with a dense reddish-brown tomentum; prothorax with three transversely placed tubercles on the middle of its disk; elytra strongly punctato-striate, the alternate interstices dark brown, with a few white hairs dispersed in spots, the third interstice from the suture with three dense fascicles of dark-brown hairs; eyes, mandibles, and antennæ black, the latter with their joints from the fourth to the eighth white at the apex, the ninth entirely white, except at its apex; legs and beneath brown varied with greyish. Length 8 lines.

The preceding notes having been extended to beyond what was originally contemplated, the species described have been placed without any regard to their natural affinities: there are still, however, many forms, particularly in the extensive private collections of Mr. Wallace, quite as remarkable as any yet published, besides a number of species referable to genera which I have here sought to establish*.

The following are represented on the two Plates:—

PLATE I. *Hucus melanostoma*, *Mycteis marginicollis*, *Ethneca Bakewellii*, *Plintheria luctuosa*, *Nessia didyma*, *Esocus lachrymans*, *Dysnos auricomus*, *Apatenia viduata*, *Misthosima mera*, *Hypseus fascicularis*, *Phæochrotes porcellus*, *Eczesaris atomaria*, *Phaulimia ephippiata*, *Genethila retusa*.

PLATE II. *Apolecta parvula* (Thomson), *Byastus cephalotes*, *Protædus mærens*, *Zygænodes Wollastoni*, *Dipieza Waterhousei*, *Nerthomma stictica*, *Exillis longicornis*, *Penestica inepta*, *Habrisus pilicornis*, and *Cedus tuberculatus*.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

January 25, 1859.—E. W. H. Holdsworth, Esq., F.L.S., in the Chair.

ON A SPECIES OF EOLIS, AND ALSO A SPECIES OF LOMANOTUS NEW TO SCIENCE; WITH THE DESCRIPTION OF A SPECIMEN OF EOLIS CÆRULEA OF MONTAGU. BY WILLIAM THOMPSON.

My dredging labours in Weymouth Bay have again been rewarded by the acquisition of two new species of the Nudibranchs, and by the rediscovery of one of Montagu's lost species. This last acqui-

* One of these (*Nessia*) may possibly be synonymous with *Dendropemon*, Schön., founded on a rare Fabrician insect from Sumatra, which I have not seen.

tion is very pleasing to me, believing, as I do, that all the species described by Montagu still exist. On a former occasion I was fortunate enough to obtain his *Thecacera pennigera*.

The species described in this paper I was anxious should not rest on my sole authority; added to which, I was not sufficiently versed in their anatomy to give an equally full description with those in the valuable work on the Nudibranchs published by the Ray Society. After I had taken my notes, I accordingly despatched them to Messrs. Alder and Hancock, who have kindly placed their descriptions at my disposal, and, in the interest of zoological science, I use their descriptions in preference to my own.

EOLIS ADELAIDÆ.

“Body nearly half an inch long, slender, tapering to a fine point behind, pellucid orange-red. Dorsal tentacles moderately long, smooth, tapering, divergent, and set a little apart at the base; orange-red with yellow tips, and a pale line down the back of each, terminating in a clear oval spot on each side behind the tentacles, on which the minute eyes are placed. Oral tentacles a little shorter than the dorsal pair, and of the same colour, the pale line on their surface also extending backward to the clear spot. Branchiæ elliptical, inflated, of the same colour as the body, a little deeper towards the top, apices white; the central gland is yellowish, rather wide, and irregularly folliculated or lobated; they are arranged in twelve or thirteen rather distant transverse rows of three or four papillæ each, commencing a little behind the tentacles, and divided by a narrow space down the back; the papillæ nearest the dorsal ridge are the largest and the most inflated. Foot pellucid, slightly tinged with orange-red, linear, narrow, tapering gradually to a point a little beyond the branchiæ behind, truncated in front, with the angles rounded off.

“This species most nearly approaches *Eolis Farranni*, Ald. & Han., from which it differs in colour, and in the number and form of its papillæ, which are broader towards the apex. The spawn also differs, forming a narrower coil, with the free margin undulated.”

Hab. I obtained two specimens by dredging in six fathoms water in Weymouth Bay; the first, which was white in colour, I obtained in September 1854, and the second specimen was obtained in the following month. The colour of the last was orange-red; and this is described by Messrs. Alder and Hancock as the typical example. In each case the *Eolis* was feeding on *Plumularia*. The difference in the colour here shown is a further evidence of the puerility of considering mere colour as a test of species in the lower animals. I have named this lovely Nudibranch in memory of a little daughter, whose love for zoology, and retentive memory on the subject, promised much.

EOLIS CÆRULEA, Mont. sp.

Doris cærulea, Mont. Linn. Trans. vii. 78. pl. 7. f. 4, 5.

“Body half an inch long, slender, nearly linear, tapering to a fine point behind, of a pale pellucid green. Head small, very short, and

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rounded in front, with a dark mark in front of the dorsal tentacles, caused by the buccal mass. Dorsal tentacles long, slightly tapering, tinged with green and speckled with opaque yellow; points rather obtuse and spreading; bases closely approximating, with the eyes close to their outer margins. Oral tentacles greenish, very short and delicate. Branchiæ fusiform, almost linear, stoutish, moderately long; central gland not quite so wide as the sheath, irregularly foliculated and granulated, green below and dark blue above; outer surface of the papillæ above pale blue, below pale green; a few yellow freckles in front; tips strongly capped with rich orange-red, banded below with a rim of bright yellow: the extreme points are colourless and pellucid; they are arranged in ten transverse, rather distant rows of five or six papillæ in each row; the four anterior rows are rather closer together than the rest, and are divided from them by a widish space; the front row contains only two papillæ, placed as far forward as the dorsal tentacles. Foot tinged with green, narrow, slightly lobated in front, with the lateral angles considerably produced and rather obtuse."

This interesting individual was dredged by me in Weymouth Bay, on a rough bottom in six fathoms water, and sent to Mr. Albany Hancock in the latter part of September 1858. In the note accompanying this description, Messrs. Alder and Hancock remark, that "as Montagu's description of this very beautiful species is exceedingly short and incomplete, and as no one appears to have captured it since his time, it has been thought desirable to redescribe it. However, there can be no doubt that this is Montagu's species; and its rediscovery, which is due to Mr. Thompson, of Weymouth, is of great interest."

LOMANOTUS PORTLANDICUS.

"Body upwards of an inch and three-quarters long, depressed, quadrilateral, tapering a little backwards, pellucid white, tinged with brownish yellow on the back, in front pale orange-red. Head rounded in front, covered with a distinct veil, bearing on each side two rather long tentacular processes, the outer ones the longer. Tentacles set well forward and placed apart, elliptical, tapering to a pretty fine produced and truncated apex; closely laminated on the upper portion, which is of a pale yellowish colour, with numerous fine laminæ much inclined backwards and downwards, and divided in front by a narrow line; the lower portion, colourless and smooth, is contained within a tall, narrow sheath, of an orange-red colour above, with the margins divided into six finely-pointed filaments, those in front shortest. The sides of the back are produced into wide pallial margins, which, commencing in front of the bases of the tentacular sheaths, are continuous behind the termination of the tail; these margins are deeply and symmetrically undulated, forming on each side four loops, which meet along the medio-dorsal line, and are fringed with numerous short, pointed, orange-red papillæ tipped with white; the papillæ die out towards the tail, and are reduced in size on the part of the loop next the foot. Foot white, with the

margins nearly parallel, obtusely pointed behind, in front bilobed and deeply grooved, with the anterior lamina notched in the centre; the lateral angles much produced and recurved."

I obtained this species on two occasions. The first specimen was procured by me whilst dredging in Weymouth Bay, on the 15th of December 1855, and the second specimen in the same month of the following year. Both these individuals, as soon as I had completed my notes, I sent to Mr. Hancock, who received them in good condition, and who, in conjunction with Mr. Alder, I am happy to say, has made drawings of all the species described in this paper,—I trust, in order to enrich, at an early period, another number of their admirable work on the Nudibranchiate Mollusca. Mr. Hancock suggests for this species the specific name of *imbriata*; but, whilst admitting the propriety of the name, I trust he will fall in with my wish of identifying the district in which it was first taken.

I would here draw attention to the irregular appearance of some of the Nudibranchs. Two species of *Doris*, formerly obtainable in Weymouth Bay in moderate abundance, are now scarce; *Eolis papillosa*, at one time very abundant, is now represented by an occasional specimen: these are all tidal species. *Eolis coronata* and *Landsburgi* were never very plentiful, and are not less scarce than formerly; but far different is it with *Polycera 4-lineata* and *Antiopa cristata*. Some three years since, we could obtain a dozen of each of these species any day—I have seen three in one net (both these species appear to be gregarious); whilst during the whole of the past summer my captures have not exceeded half a dozen of both species for the whole year. The dearth was occasioned by the severe winter we had some few years since, and which also destroyed many fish, and rendered *Adamsia palliata* very rare.

DESCRIPTION OF SIX HITHERTO UNDESCRIBED SPECIES OF BATS. BY ROBERT F. TOMES.

1. SCOTOPHILUS MICRODON, n. s.

The present species is one having the same subgeneric characters as the common *Pipistrelle* of Europe and the *Scot. Greyii* and *S. pumilus* of Australia. To the latter species it is, by the form of its head and ears, most nearly affine, but may at once be distinguished from it by its greater size and by its smaller teeth.

The crown is but little elevated above the facial line; but the muzzle, although short, is more pointed than is usual in the flat-crowned species. The ears are very small, nearly as broad as high, with the outer margin slightly hollowed out about the middle, below which is a faintly developed lobe, and immediately above which is the tip of the ear,—the latter being obtusely angular, and directed outwards. The inner margin is very much rounded, especially at two-thirds of the distance from the base, where the convexity is so prominent as to be quite as high as the tip itself, the portion between this prominence and the tip being nearly horizontal. Altogether the ear bears some resemblance to that of *Miniopterus*. *Scot. pumilus* is the only species which has ears of form similar to

those of the present species; but they are, although the species is smaller, rather larger, relatively longer, and have their tips less outwardly directed, and more rounded. The tragus, as in all others of this group, is curved inwards, and rounded at the end; but it differs from that of some others, in being rather widest in the middle.

In relation to the size of the animal, the wings are rather ample, and rather broad for their length, the fourth finger (that which determines the breadth of the wing) being longer than the two basal phalanges of the longest finger*. All the wing-bones are somewhat slender. The thumb is rather long, not quite half enveloped in the membrane.

The legs are rather long and slender, the tibiæ being quite as long as in *S. Gouldii*, a species of greater size than the present; they are just twice the length of those of *S. pumilus*. The feet are large, about the length of those of *S. Leisleri* of Europe, the toes taking up half their entire length, and the wing-membranes extending to half the distance between the extremity of the tibia and the base of the toes. Tip of the tail enclosed in the membrane.

The fur of the head extends to rather near the end of the nose; and the upper lips are furnished with moustaches; so that the only naked space is around and in front of the eye. The fur of the back does not extend on to the interfemoral membrane, and only to a very limited extent on those of the wings; but that of the under parts encroaches on the membranes all round the body, especially beneath the arms, where it reaches nearly to the elbow. A straight line from that joint to the knee would pretty accurately define the hairy portions of the wing-membranes.

In quality the fur is soft, and rather long, bicoloured above and beneath. That of the back of a specimen from South Australia is dark brown at the root, with the terminal half of the hairs reddish-brown, uniformly of the latter colour around the rump and on the flanks; beneath, dark brown at the root, with the terminal third light cinnamon-brown, that on the membranes paler and unicoloured. Membranes lightish brown.

Another specimen from Van Diemen's Land differs only from the last in being much darker in colour; the fur of the upper parts black at the root, tipped with sepia-brown; beneath, the same, but the brown tips lighter and more tinged with rufous, especially that on the membranes and around the pubal region, where it is unicoloured and reddish-brown.

* In many species of this group the fourth finger is not more than equal in length to the two basal phalanges of the longest; and in the more typical species of the genus, such as the common Noctule, it does not extend much further than the middle of the second phalange of the longest finger. In making use of the relative lengths of the wing-bones, either as a generic or specific distinction, it is absolutely necessary that perfectly adult examples be examined; for, in those which are not, they vary so much with the age of the individual, as not only to be useless as a means of distinction, but to lead to absolute error and consequent confusion. Judging from the figure given by M. Temminck of *V. brachypterus*, I should expect to find his specimen with the apophyses of the phalanges of the fingers imperfectly ossified.

In the following table, the dimensions in column 1 are those of the South Australian specimen, those in column 2 of the one from Van Diemen's Land, whilst those in the 3rd have been taken from a specimen of *S. Greyii* from Port Essington (one of the types in the National Collection), and are added to show the difference in the size of the two species,—*S. Greyii* being the only Australian bat appertaining to this restricted group which approaches in size the species here described.

	1.		2.		3.	
Length of the head and body ..	2	6	2	2	2	6
——— of the tail	1	8	1	5	1	3
——— of the head	0	7?	0	7	0	7
——— of the ears	0	3	0	3	0	4
——— of the tragus	0	2	0	2	0	$2\frac{1}{4}$
——— of the fore-arm	1	5	1	$6\frac{1}{2}$	1	$4\frac{1}{4}$
——— of the longest finger ..	2	8	2	10		
——— of the fourth finger....	2	0	2	1		
——— of the thumb	0	4	0	4		
——— of the tibia	0	8	0	$8\frac{1}{2}$	0	6
——— of the foot and claws ..	0	4	0	4	0	$3\frac{3}{4}$
——— of the <i>os calcis</i>	0	7	0	7		
Expanse of wings.....	11	3	11	8	8	6

The teeth of this species, although not sufficiently examined to furnish a comparative description, are nevertheless seen at a glance to be of very small size, not only in reference to the size of the animal, but also actually smaller than those of several other species of much less size, such as *S. trilatitius*, *S. lobatus*, and *S. abramis*. Hence the specific name of *microdon* here bestowed upon it.

2. SCOTOPHILUS DARWINI.

The next species which I have to describe has been presented to me by Mr. Darwin, with the information that it had been received from the Canary Isles.

In a collection of Bats from Madeira, given to me also by Mr. Darwin, I could only enumerate two species, both European, viz. *S. Leisleri* and *S. marginatus*; and I was somewhat surprised to find in the present species one which I had not before met with. None of the descriptions of African species in the works of Temminck, Wagner, Peters, Smith, and others, apply to this species; and I therefore regard it as new, and describe it as follows:—

It is one of the same group as the species just described, and as the *S. Kuhlii* and *S. pipistrellus* of Europe. It is characterized by a somewhat more robust make than these species, and has rather broader ears and tragi.

The head is rather broad and flat, the crown being but little raised above the facial line; the glands of the lips are considerably developed, and bulge sufficiently to occasion the nostrils to open nearly straight forward, although the interruption in the outer margins of the latter sufficiently indicates that with a more pointed

muzzle they would open sublaterally ; were the specimen taken from the spirit in which it is preserved and dried, it is probable that this would be the case. In the middle of the face is a kind of hollow, occasioned by the labial glands on each side being developed in an upward direction, thus leaving a depression between them*. Between the nostrils is a space of moderate extent, and but very faintly emarginate. The ears are rather large, triangularly oval, as broad at the base as they are long, and have their tips brought to a rounded point ; about the middle of their outer margin they have a distinct but shallow notch, below which is a lobular portion, as in many other species of this group, but differing from all others which I have seen in having a small but very well-defined notch about its middle. These organs altogether are more like those of *S. Kuhlii* than of any other species, but are larger, besides having the double emargination just noticed†. The tragus is rather short and broad, curved inwards, and with the end very much rounded ; on its outer margin, near the base, is a projecting angular point, without any accompanying notch.

The wing-membranes extend to the base of the toes, and the latter are half the length of the foot. The thumb is moderate, with the basal phalange much the shortest. The terminal vertebra of the tail is free.

The fur of the head extends forwards to between the eyes, and thence in a narrow strip towards the nose. Over each eye is a wart bearing a bundle of stiff hairs ; and a similar tuft springs from the top of the labial glands ; the upper lips are also slightly fringed with similar hairs, most conspicuous about the corners of the mouth. The remainder of the face, the ears, and the tragus are naked. The fur of the back spreads on the upper surface of the interfemoral membrane, sparingly, for nearly half its length, as in *S. Kuhlii*, and similarly to a small extent on the membranes near the sides of the body. Beneath, the membrane immediately around the pubes is dusted with very short hairs, more abundant on the vertebræ of the tail than elsewhere. On the membrane contiguous to the sides of the body, fur of a much longer kind extends, to a much greater degree than in *S. Kuhlii*.

On both surfaces of the body the fur is bicoloured : above, very dark brown at the base, tipped with lighter and more rufous brown, that on the membranes wholly of the latter colour ; beneath, it is dark at the base, tipped with paler brown, with less of the rufous tinge than that of the upper parts. On the under surface of the membranes the fur is uniformly of the same colour as the tips of the hairs on the belly, but on the pubes it is paler. Membranes dark brown.

Such appear to be the colours of the fur, so far as can be gathered from the examination of a specimen in spirit ; but it is necessary to

* In the *Romicia calcarata* of Dr. Gray the lip-glands are so much developed as to leave a deep pit between them. It belongs to the present group.

† I am here comparing a specimen in spirit with others in skin,—a plan not always attended with perfectly satisfactory results.

consult others in skin before this point can be determined with accuracy.

Although in its external appearance *S. Darwini* bears considerable resemblance to *S. Kuhlii*, it differs, besides having a somewhat differently-shaped ear and broader tragus, in the form and arrangement of the fore teeth. In *S. Kuhlii* the upper incisors are rather long and slender; the inner ones are deeply forked at their apices, and longer than the outer ones, which are slender and pointed, somewhat like small canines; and there is a visible interval between the points of the inner and outer ones. In *S. Darwini*, on the contrary, they are short and obtuse, of nearly equal length, the inner ones faintly cleft at their points, and the outer ones so closely packed to them as to leave no space even between their points. Again in *S. Kuhlii* there is a space between the canine and the "carnassier" or sectorial tooth, in which is placed a small and conical premolar, within the line of the teeth, but distinctly visible from the outside; whereas in *S. Darwini* the canine and the "carnassier" are contiguous, and there is a very small anomalous premolar placed in the inner angle formed at their bases, visible only from inside.

These differences in the dentition are alone sufficient to distinguish the species from *S. Kuhlii*. From *S. marginatus*, *S. ursula*, and *S. Nathusii* it may be also recognized by the form of the upper incisors; and these are the only European species with which it could be confounded.

Length of the head and body	2	1
———— of the tail	1	5
———— of the head	0	8
———— of the ears	0	4½
———— of the tragus	0	2
Breadth of the tragus	0	1½
Length of the fore-arm	1	5
———— of the longest finger	2	6
———— of the fourth finger	1	8
———— of the thumb	0	2
———— of the tibia	0	6¼
———— of the foot and claws	0	3
———— of the <i>os calcis</i>	0	5
Expanse of wings	9	9

Hab. Palma, Canary Isles.

Obs. The Madeiran species being European ones, and one of them African also (i. e. *S. marginatus*), renders it not unlikely that the species inhabiting the Canaries may also occur in Africa, and perhaps in Europe. With a view to the chance of this, I have compared this species with what now remains of the types of *Vespertilio Aristippe*, *V. Leucippe*, *A. Alcythoe*, *V. vispistrellus*, and *V. Savii*, but find nothing which leads me to regard it as referable to any of them; and I have therefore given such a detailed description as will be amply sufficient to distinguish it from all recorded European species.

3. *VESPERTILIO CALIGINOSUS*, n. s.

This is one of the smallest species of the genus, being rather less than the *V. mystacinus* of Europe, which in general appearance it very much resembles. *Vespertilio parvulus*, Temm., is the only species of this restricted group which I have yet seen, that is smaller than the present one.

There are a few Asiatic species of Bats which possess the characters of the group of which *V. mystacinus* is typical, but which have the tragus much shorter and less acute, and not so much bent outwards. *Vesp. trilatitius*, Temm. (not Horsfield), and *V. tenuis* of the same zoologist, may be mentioned as examples; and the species I am about to describe will constitute a third.

The top of the head is rather elevated, about as much so as in *V. mystacinus*; and the muzzle is pointed as in that species, but is considerably shorter. The ears are rather small, and have narrow but rounded tips, are notched at their outer margin near the base, below which is a distinct rounded lobe, which is almost hidden in the long fur of the neck. The tragus is rather short, not quite half the length of the ear; its inner margin is straight; its outer one curves evenly from the base to the tip, in such a manner that it is of pretty uniform breadth for about half its length, from which it narrows to a subacute tip. The tragus of *V. mystacinus* is precisely of this form for two-thirds of its length,—the outer margin being convex, the acute tip being produced, or as it were added, and taking an outward curvature in the dried specimens, but straight when fresh or preserved in spirit. Near the base is a well-defined notch, dividing off an angular lobular portion, quite at the base. No such notch appears in the tragus of either *V. mystacinus* or *V. tenuis*.

The wings are proportioned much as in *V. tenuis*, excepting that the thumb is much smaller, whilst the bones of the wings, although this species is considerably less, are quite as stout as in that species. The feet are small, with toes which are rather more than half their entire length. Wing-membranes extending exactly to the base of the outer toe, which is much shorter than the others.

All the membranes are more strongly marked with lines than those of *V. tenuis*, and especially the interfemoral, on which may be counted as many as fifteen or sixteen transverse dotted lines, each dot bearing on the under side of the membrane one or more fine, short, bristle-like hairs. In *V. tenuis* about a dozen such lines may be observed.

Nearly the whole of the face is covered with thick soft hair, wanting only on the end of the snout, the front of the under lip, and immediately around the eye. On the glands of the upper lip it takes the form of two distinct tufts, projecting laterally, having the appearance of whiskers. In front of each eye is a single long hair, and a few other similar but shorter ones project from the upper lip and the chin. The fur of both surfaces of the body extends on to the interfemoral membrane very slightly; but the wing-membranes are free from hair.

On all parts of the body the fur is long and soft, and rather silky; and it is bicoloured above and beneath. That of all the upper parts is black at the base, more or less tipped with shining yellowish-chestnut, on the head and neck scarcely perceptible, but becoming more marked towards the middle of the back and on the rump, where it is much the brightest. Some of the darker examples of *V. mystacinus* bear some resemblance to the present species in this respect, but are less bright. Beneath, the fur is dead black, with the tips of the hairs greyish-brown, a little paler on the pubes.

Membranes and naked parts dark brown. The complete ossification of the finger-joints indicates that the specimen is adult; but the sex has not been ascertained.

Length of the head and body	1	6
——— of the tail, about	1	0
——— of the head	0	6
——— of the ears	0	4
——— of the tragus	0	2 $\frac{1}{4}$
——— of the fore-arm	1	2 $\frac{1}{2}$
——— of the longest finger	2	2
——— of the fourth finger	1	6
——— of the thumb	0	2
——— of the tibia	0	6
——— of the foot and claws	0	2 $\frac{3}{4}$
Expanse of wings	8	6

Hab. I received this with a number of other Indian species from Mr. Warwick, with the statement that they all formed a part of a collection made by Capt. Boys. Amongst them were several specimens of *Scot. coromandelicus*; and the present species was confounded with them, until they were mounted for the cabinet, when the differences became sufficiently obvious.

4. VESPERTILIO SERICEUS, n. s.

A species remarkable for the great beauty of its fur, which is thick, very soft, and with all the gloss of unspun silk. In size and proportions somewhat similar to *V. Nattereri*, and the crown of the head elevated about as in that species; but the muzzle, although pointed, relatively a little shorter. Unfortunately the ears and tragi have been so much injured as to render it impossible to give an exact description of them; but it is evident that the ears were rather narrow, and more or less emarginate at their outer margin; and that the tragus was long and narrow, may be seen from what remains of one of them, the end only being lost.

The organs of flight are of medium size and proportions; the thumb is rather long, and has the basal phalange short, and the claw long and slender, with but a slight degree of curvature. The wing-membranes spring from the base of the toes. The feet are rather large,—the toes taking up a little more than half their entire length, and armed with claws, which, like those of the thumbs, are

rather long, slender, and but little curved. These parts have much the size and proportions of those of *V. Nattereri*.

Nearly the whole of the face is hairy; but there is a naked space around each eye. A thick moustache borders the upper lips, which, extending from the angles of the mouth upwards and forwards, joins the fur of the forehead, which extends nearly to the end of the nose. The chin is destitute of hairs. The fur of the back encroaches to a trifling degree on the interfemoral membrane; and the same may be said of that of the belly; everywhere else the membranes are naked.

On all parts of the body the fur is bicoloured: above dark brown at the root, with the terminal third light reddish-brown; beneath similar, but the brown at the root darker and more extended, the tips of the hairs for one-fourth only of their length being greyish-brown, on the abdomen whitish-brown.

Everywhere the fur maintains its peculiar silky lustre, as much so on the under as on the upper parts of the body. This quality of fur will at once distinguish this species from every other which I have ever seen.

The dentition, as far as it can be studied in a stuffed specimen, is as follows:—Upper incisors in pairs, placed close together, with a considerable interval in the centre between the pairs, and also an interval on each side, between them and the canines. They are rather short and obtusely conical, the inner ones indistinctly bifid at the apex. The canines are rather small and short, and are followed by two small premolars on each side, of a bluntly conical form, the first being the larger of the two. To these succeed the two large premolars, or *carnassiers*, in this species with the point only a little raised above the crowns of the true molars. In the lower jaw the incisors, six in number, are somewhat irregularly ranged and trilobed, the canines short, and the two following premolars on each side of equal size, small and conical. The next premolar is of greater size and more acutely conical. The chief peculiarity in the dentition of this species is the shortness of the teeth, whilst they maintain throughout a medium degree of stoutness.

Length of the head and body, about	2	0
———— of the tail	1	5
———— of the head	0	9
———— of the fore-arm	1	5
———— of the longest finger	2	4
———— of the fourth finger	1	9½
———— of the thumb and claw	0	3¾
———— of the tibia	0	8
———— of the foot and claws	0	4¾
Expanse of wings	10	0

Hab. Not known.

5. PHYLLORHINA AURITA, n. s.

In size this species about equals *Rhinolophus hipposideros* of Europe.

It may be readily distinguished from all others of the genus by the great size of its ears, and seems to hold the same position amongst the species of *Phyllorhina* that *Rhinolophus cornutus* does in the genus *Rhinolophus*.

So far as may be learned from the inspection of a specimen in skin, the facial crests greatly resemble those of *Ph. bicolor*, and the general form of the whole head, face, and ears is pretty much as in that species, excepting that the muzzle is relatively a little more compressed, and the ears much larger. These latter organs are one-fourth longer than the head, and of a broadly ovoid form, are somewhat diaphanous, and thickly marked with glandular dots. They have about sixteen transverse sulci, which do not quite extend to the outer margin of the ear, but are bounded by a well-defined line which runs parallel with the margin, and divides off a narrow portion, having the appearance of a distinct border. The inner or front margin of the ear has three such parallel lines, all running from that part of the ear which is near to the face, to near the tip. This peculiarity of having the ears margined as described, and the central part sulcated, is not confined to this species; but it is much more strongly marked in this than in any other which I have seen. *Ph. cervina* and *Ph. caffra* exhibit the same arrangement of lines in the ear, but in a much less degree.

The wings are broad for their length,—the fourth finger, which determines their breadth, being longer than the third*. They are distinctly reticulated, especially near the side of the body. No great peculiarities are exhibited by the posterior extremities.

The fur is strictly confined to the body, with the exception of some on the hinder surface of the ears, at their base, and a narrow fringe on one of the lines bordering their front margin inside the ear.

On all the upper parts the fur is bicoloured, nearly white at the base for three-fourths of its length, then of a medium brown colour, with the extreme tips a little paler, giving a slightly hoary appearance. Beneath, it is somewhat similar, but rather paler, especially on the humeral region and down the sides of the body; but the colours are less clearly made out. On the throat and along the middle of the belly to the pubes it is much lighter in colour, and almost unicoloured. The membranes are of a medium brown colour.

The teeth have not been examined with care, but appear to be rather long, especially the canines. They are longer than those of *Ph. cervina*, which is a slightly larger species.

* In *Rhinolophus hipposideros* these two fingers are of equal length; and the same is the case in *Ph. caffra*, *Ph. speoris*, *Ph. labuanensis*, and *Ph. cervina*: in *Ph. nobilis* and *Ph. insignis* the third is a little longer than the fourth, whilst in *Ph. bicolor* and the present species the fourth is the longer of the two. Of course this difference in the relative lengths of the fingers determines the comparative breadth of the wings.

Length of the head and body	1	9
——— of the tail	1	0
——— of the head	0	8
——— of the ears	0	9 $\frac{1}{2}$
Breadth of the ears, nearly	0	9
Length of the fore-arm	1	5 $\frac{1}{2}$
——— of the longest finger	2	3
——— of the third finger	1	9
——— of the fourth finger	1	11
——— of the thumb	0	4
——— of the tibia	0	8
——— of the foot and claws	0	3 $\frac{1}{2}$
——— of the <i>os calcis</i>	0	4 $\frac{1}{2}$
Expanse of wings	9	9

Hab. Unknown.

6. EMBALLONURA FULIGINOSA, n. s.

In general form this species somewhat resembles *E. monticola*, but differs in several important particulars. It is larger; and it has the fur of a uniform sooty brown, whilst in that species it is marked bicoloured, being nearly white at the root.

In its general outline the head is very similar to that of the other species of the genus; but the snout, although small and elongated, is not so pointed as in the American species, but is nevertheless more so than in the African *E. afra*, judging from the figure given by Dr. Peters. The nostrils are small and rather near together; the ears triangularly oval, longer than broad, with the outer margin entire and produced at the base along the face in a line midway between the cleft of the mouth and the eye, and ending immediately between the latter and the angle of the mouth, which are both in a vertical line: all three are therefore in a vertical line. The tragus has its two sides nearly parallel, but it is a little widest at the end; it curves slightly inwards, and has the end rounded as in the genus *Miniopterus*, but is relatively broader. Thumb rather long, with the two visible phalanges equal in length (the small terminal one, bearing the claw, being excepted), the basal one wholly enclosed in the interbrachial membrane. Wing-membranes extending to the distal extremity of the tibiæ; hinder limbs rather long and slender; toes half the length of the entire foot. *Os calcis* long; interfemoral membrane very ample, with three diverging lines from the tip of the tail to its hinder margin, one on each side of these from the root of the femur to the point of the *os calcis*, and two others, one from the distal extremity of each femur to near the middle of the *os calcis*. Transversely, this membrane has about twenty closely dotted lines.

The fur on the crown is long and thick, and approaches rather nearly the end of the nose; the sides of the face, from the auditory openings through the eyes to the upper lip, naked, or nearly so; but the upper lip is fringed with scattered short bristly hairs. The

extreme margin of the lips, both above and below, are naked and smooth.

That part of the wing-membranes which is contiguous to the under surface of the body is a little hairy; and the fur of the rump extends, to a very trifling degree, on to the interfemoral; but all other parts of the membranes are perfectly naked.

On all parts of the body the fur is rather soft, thick, and long, and perfectly devoid of lustre. It is also perfectly unicoloured everywhere, being above of a deep sooty brown with a slight tinge of rusty, and similar, though a little paler, beneath.

Upper incisors, 4, in pairs as in *Vespertilio*; they are very small, narrow near the alveolus, and blunt at the tips. Upper canines furnished with a kind of lobe or talon behind, at the base; the lower ones with a similar one in front. Lower incisors very small, symmetrically ranged, and with their cutting edges lobated.

Length of the head and body, about	2	0
— of the tail	0	7 or 8?
— of the head	0	9
— of the ears	0	5½
— of the tragus	0	2
— of the fore-arm	1	9
— of the longest finger	2	9
— of the fourth finger	1	10
— of the thumb	0	4
— of the tibia	0	8½
— of the foot and claws	0	3½
— of the <i>os calcis</i>	0	8½
— from the end of the nose to the hinder margin of the interfemoral mem- brane	3	6
Expanse of wings	12	0

Hab. "Island of Ovalee (Fiji Islands), August 1856, H.M.S. 'Herald,' F. M. Rayner." Such was the label attached to the specimen when it recently reached Dr. Gray, through whose kindness I am enabled to give the above description.

Obs. Several species of Cheiroptera have fur of much the same quality and appearance as this species. *Nyctophilus unicolor*, from Van Diemen's Land, *Molossus norfolciensis*, Norfolk Island, and *M. acetabulosus*, Mauritius and Natal, are amongst these; and the American species *M. nasutus* also has fur which approaches closely in texture that of all these species.

The present species, although it differs materially from *E. monticola*, yet bears greater resemblance to it in the form of the head, ears, &c. than to any other species. To the African species, *E. afra*, Peters, it has some similarity in the form of the snout; and all these three are species which appertain to the genus *Emballonura* as restricted by M. Paul Gervais, who separates, under the name of *Proboscidea*, those species which have a longer and more pointed snout, such as *E. saxatilis* and *E. villosa*.

February 8, 1859.—Dr. Gray, V.P., in the Chair.

ON THE MEMBERS OF THE GENUS *RUPICOLA*, AND WHETHER THERE BE TWO OR MORE SPECIES. BY JOHN GOULD, ESQ., F.R.S.

At present only two species of this splendid group of birds have been characterized, namely the *Rupicola crocea* and *R. peruviana*. It is true that several other specific names have been proposed by various writers, such as *aurantia*, *cayana*, and *elegans*; but I believe these terms all have reference to the first-mentioned species—the *Pipra rupicola* of Linnæus, the *Rupicola crocea* of Bonnaterre—a bird sent to Europe, and particularly to France, in the greatest abundance from Cayenne. There can be no doubt that the second species, the *R. peruviana* of Latham, is distinct from the *R. crocea*; but there is much doubt as to whether the specimens sent from Bogota be identical with the *R. peruviana*, since it is not to be found in the intervening country of Ecuador, whence we have long received a splendid bird, which I believe is not yet described, and to which I propose to give the name of *R. sanguinolenta*. At all events I have signally failed in my endeavours to see a male specimen of a Cock of the Rock from Peru, by which means alone the question can be determined; on the other hand, I have a female or young male from that country, which appears to differ from the females or young specimens from Bogota. In the present state of our knowledge of the subject, it will be advisable to leave the point undecided, and describe the bird from Ecuador, which is at once distinguished from its congeners by the deep blood-red colouring of its plumage, as compared with the bird from Bogota; it also differs in its smaller size, and in the relative lengths of its wings and tail. Before describing the *R. sanguinolenta*, I may mention that specimens of *R. crocea* from Demerara, although very similar in colour to those sent from Cayenne, differ considerably in the form and size of the crest,—that of the Demerara specimens being much smaller and rounder, and having the terminal crescent of brown much darker than in the more dilated crest of the Cayenne birds.

RUPICOLA SANGUINOLENTA.

Crest (which is destitute of the terminal crescentic brown mark observable in the other species), the entire plumage of the body, the lesser wing-coverts, the under wing-coverts, and the thighs rich blood-red; the greater wing-coverts, wings, tail, and the extremities of the larger under wing-coverts velvety-black; tertiaries very broad, and of a fine silvery grey; bill and feet yellow.

Total length 12 inches, bill $1\frac{3}{8}$, wing 7, tail 5, tarsi $1\frac{1}{8}$.

ON A NEW SPECIES OF *DENDROCHELIDON*, OR TREE SWIFT.

BY JOHN GOULD, ESQ., F.R.S., ETC.

The highly interesting group of Tree Swifts forming the genus *Dendrochelidon* has recently been augmented by the discovery of a new species in Celebes by Mr. Wallace—the fifth of the form with

which we are now acquainted—the four previously known being the splendid *D. mystaceus* of New Guinea and the Aru Islands, the *D. comatus* of Manilla and Malasia, the old *D. klecho* of Java, and the *D. coronatus* of India. The new species (which is the second in size, being only exceeded in this respect by the *D. mystaceus*) is, as already stated, from Macassar, Celebes; it is most nearly allied to the *D. comatus* and *D. klecho*, but differs from both those birds in its much larger size, and in the deep-blue colouring of its shoulders and wings. This bird, which I have named *Wallacii* in honour of its discoverer, may be thus described:—

DENDROCHELIDON WALLACII.

Crown of the head deep green, with steel-blue reflexions; lores black; over each eye an indistinct stripe of greyish-white; sides and back of the neck and the upper part of the back green, passing into grey on the lower part of the back and rump, which colour again passes into the bluish-green of the upper tail-coverts; shoulders blue, with reflexions of green; primaries bluish-black, with green reflexions; tertiaries greyish-white; tail bluish-black; throat and under surface grey, passing into greyish-white on the vent and under tail-coverts; bill and feet olive.

Total length 10 inches; bill, from gape to tip, $\frac{1}{2}$; wing $7\frac{3}{8}$, tail $5\frac{1}{8}$.

Remark.—The usual chestnut-coloured mark immediately below the ear, indicative of the male, occurs in this as in the other members of the genus.

ON THE SEA BEAR OF FOSTER, THE *URSUS MARINUS* OF STELLER, *ARCTOCEPHALUS URSINUS* OF AUTHORS. BY DR. GRAY, F.R.S., V.P.Z.S., P. ENT. SOC.

Steller figures and describes a large Seal under the name of *Ursus marinus* (Nov. Comm. Petrop. ii. 331, t. 15), which is the authority for the Ursine Seal of Pennant (Quad. ii. 526) and *Phoca ursina* of Schreber, Gmelin, and most succeeding authors.

Forster, in Cook's 'Second Voyage' (ii. 203), appears to speak of the same animal under the name of "Sea Bear."

I had not been able to see a specimen of this species in any of the Museums which I had examined on the Continent or in England, or to find a skull of the genus from the Northern Pacific Ocean; yet I felt so assured, from Steller's description and the geographical position, that it must be distinct from the Eared Fur-Seals from the Antarctic Ocean and Australia, with which it has been usually confounded, that, in my 'Catalogue of Seals in the Collection of the British Museum,' I regarded it as a distinct species under the name of *Arctocephalus ursinus*, giving an abridgment of Steller's description as its specific character.

The British Museum has just received, under the name *Otaria leonina*, from Amsterdam, a specimen of the Sea Bear from Behring's Straits, which was obtained from St. Petersburg. It is evidently not an *Otaria*, but a true *Arctocephalus*, and agrees in all its cha-

acters with the Sea Bear, *Ursus marinus* of Steller, and not with the Sea Lion or *Leo marinus* of that author, which is called *Otaria Stelleri* in my catalogues, and was confounded with *Otaria leonina* of the Southern Pacific Ocean by Nilsson and most modern authors. The latter animal is still a desideratum in the British Museum and other European Collections.

The skin is 8 feet long, and agrees in all particulars with Steller's description of the adult male of the species, and is most distinct in external character and colour from the Fur-Seal (*A. falklandicus*) of the Falkland Islands and of *A. lobatus* from Australia.

The skull is equally distinct from the various skulls of all the species of the genus *Arctocephalus* (both Fur- and Hair-Seals) which are in the collection of the British Museum, and is easily known from them by the shortness of the face and the height and convexity of the nose.

The skull of this specimen is quite distinct from the skull of the *Arctocephalus Gilliespii* of California, recently described by Dr. Mac Bain in the 'Proceedings of the Physical Society of Edinburgh,' under the name of *Otaria Gilliespii*, from a skull in the Edinburgh Natural History Museum, of which we have a cast in the British Museum: but we are not able to ascertain with certainty whether this is a Fur- or Hair-Seal, though, from the length of the palate, compared with the width of the skull at the hinder grinders, I am induced to believe that it may belong to an animal which has a soft under fur. This proves that the Seals from the different parts of the West Coast of America are distinct from each other, each specimen having a specific geographical range.

ARCTOCEPHALUS URSINUS. Northern Fur-Seal.

Adult male grey-black; hair of the back long, black, reddish, with a subterminal band and a short grey tip; under fur short, woolly, red; the hair of the neck and front of the body longer, forming a kind of mane; lips and nose reddish; whiskers very long, strong, white, smooth, tapering to a fine point. Skull short, forehead very convex and rounded.

Hab. Behring's Straits.

I may state that the name *Arctocephalus ursinus* is usually applied to the various species of Eared Fur-Seals found in the different English and Continental Museums.

DESCRIPTION OF A NEW SPECIES OF FISH, PERISTETHUS RIEFFELI. BY PROF. DR. KAUP.

This new species is an inhabitant of the seas of China and perhaps Japan, and shows, with a species of Japan and two of the Moluccas, that the Mediterranean species is not so isolated as we have hitherto believed.

The genus *Peristethus* (*Peristedion*) is to be placed in the middle of the subfamily *Triglinæ*, and connects the similar forms of *Dactyloptera* with those which are near to the genus *Trigla*.

The highest genera, *Cephalacanthus* and *Dactyloptera*, have no separated rays on the pectorals, a thorn-shaped prolongation of the preopercle, and a normal covering of scales without a trace of lateral line.

The lowest group shows also a high, less obtuse head, and three free articulated rays on the pectorals, small scales, and a distinct lateral line. To this section belong *Prionotus* and *Trigla*.

The genus *Peristethus*, which connects both groups, has only two articulated rays before the pectorals; and before the commencement of the small furcated caudal are three carinated scales, of which there are two only in *Dactyloptera*. The strongly-armed body is without a lateral line.

From these characters, this genus is more allied to the last than the first group. As in *Trigla lyra*, the snout is furcated, and along the dorsal line is a series of elevated thorns, by which the dorsals are placed in a more or less deep furrow.

If we see marks enough to connect *Peristethus* with one or the other group, there is also a series of characters by which this genus differs from all the others. *Peristethus* shows no trace of teeth in either jaw; and the symphysis of the lower jaw has fringed skin-flaps, more or less moveable, hanging downwards. The head is long and very compressed, with two fork-shaped prolongations on the end of the snout. Every part of this fork is rough on the margins, and on its lower part are four cavities covered with a thin transparent skin. The long head is only three times the length of the body; and the body has a pyramidal form with eight sides. All the scales are connected one with another, and have in the middle a thorn directed backwards. The pectorals are of middle length, not quite reaching the ventrals, and show only two free fingers. The over-breast and belly are of two shields, with a serrated suture in the middle, and elevated on the margins; the first shield is larger and longer than the second, which is rarely separated in two.

The dorsal commences on the second ring of the body and reaches not quite to the end of the body. The males are distinguished by the first rays of the dorsal being thin, filiform, and elongated. This is the case in the European species; and the others are no exception. The anal commences next the anal ring, and is as long as the second dorsal.

The colour is red; but this colour changes after death to a dirty ochreous-yellow.

The flesh of the smaller species is very dry and is not used. The Mediterranean species is not rare, but the fishermen take it only as a curiosity. The cavities in the two branches of the fork make it very weak and fragile; and most examples of these fishes have lost one or both parts of their fork.

In quite perfect specimens we never find the fork longer than an inch; therefore the horned fish of Pliny must be distinct from the Mediterranean fish. This horned fish of Pliny had horns 18 inches in length, and is, according to the opinion of Cuvier and Valenciennes, the *Cephaloptera*, which Rondelet has never seen or described.

It is, in fact, curious, that the old authors never mention the *Cataphractus*,—the reason probably being its rare appearance, its smallness, and its bad flesh.

As I always place the smallest forms with the most rounded skull at the head, and give the bird-types with the largest pectorals, which enable these forms to fly, the second place, and as I see in the *Peristethus* the bone- or reptile-fish, and in *Prionotus* the real fish-type, my arrangement of the genera in this little subfamily is as follows :—

- I. CEPHALACANTHUS.
- II. DACTYLOPTERA.
- III. PERISTETHUS.
- IV. PRIONOTUS.
- V. TRIGLA.

After this preface, we proceed to distinguish the different species of

Genus III. PERISTETHUS (PERISTEDION*).

PERISTETHUS CATAPHRACTUS.

Peristedion cataphractum, Lac.

P. cataphractum (♂) et *chabrontera* (♀), Risso, iii. p. 402.

Octonus holosteon, Raf.

Trigla hispanorum chabrontera, Osb.

Trigla hamata, Bl. Schn.

Malarmat, Rond. p. 237 (♂), excellent fig. ; Cuvier & Val. iv. p. 101 (♂), excellent fig.

Peristedion malamart, Yarr. p. 67 (♂), excellent fig.

The figure of Bloch, t. 49 (♂), is bad, shows too many scales and rays in the second dorsal.

Diagn.—Front with three thorns. Eye-covers with thorns. Preopercle leaf-shaped, without prolongation. The length of the head to the breadth under the middle of the eyes as $2\frac{1}{2}$: 1. Breadth of the head nearly equal to its height, measured under the eyes. The forks more or less divergent.

Not exceeding the length of a foot. Common in the Mediterranean, more rare in the Channel.

PERISTETHUS ORIENTALIS.

Peristedion orientale, T. & Schleg. Fn. Jap. t. xiv. f. 5, 6 ; t. xv. f. 1, 2.

Similar in length to *P. cataphractus*, but without thorns on the front, and eye-covering. A female, besides the short rays of the first dorsal, shows the ventral shield separated into two, which is abnormal. On the symphysis are three small skin prolongations, and behind it a longer one.

I find the true specific character in the form of the head, and therefore doubt whether the number of the rays shows a great difference from the other species.

* The name *Peristedion* is wrongly formed.

PERISTETHUS RIEFFELI, Kaup.

Thorns on the front, not on the eye-margins; parts of the fork broader, and convergent towards the end. The breadth of the head is to the length as $1 : 1\frac{3}{5}$. The height of the head not quite half the breadth. The thorn-shaped prolongation of the preopercle not comparable with those of *P. cataphractus* and *P. orientalis*. The eyes are proportionately smaller, the front narrower and more concave, than in *P. cataphractus* and *P. orientalis*.

When we compare its head with those of the other species, we are led to believe that such a head belongs to a larger fish, which, however, is not the case. Our fish is scarcely larger than a large individual of *P. cataphractus*. In one cavity of the eye of a dry example I found a piece of China paper with the written characters of the country. From that, and the maceration and the varnish, I believe that this example came in an insect-box from China; it is, judging by the short rays of the first dorsal, a female.

I have named this very interesting species in honour of the memory of my true and excellent friend Dr. Rieffel, who has done so much for our Museum and University.

Besides these smaller species of *Peristethus*, there appear to be two mentioned by older authors, which attain an immense size. The first I call

PERISTETHUS GIGAS.

Length 3 feet, of which the head is one-third.

In Valentyn, 'Oud en nieuw Ostindien,' tom. iii. p. 363, fig. 55, is a fish mentioned and figured under the name Tkan Scythân Merah (Red Devil Fish), which belongs, according to Cuvier, to this genus.

A bad plate of this is also given in Renard's 'Poissons et Ecrevisses,' fig. 67. What makes me doubt whether Renard copied the engraving of Valentyn, is that on the surface of the fork are cavities covered with membranes, which we do not see in the figure of Valentyn. Therefore I believe that both authors used one and the same painting belonging to another collection, made at Amboyna.

These cavities on the upper side of the bifurcated snout, which we find in the better known species on the under side, permit us to hazard two conjectures. Either this species has these cavities on both sides of the fork, or, by the mistake of the first artist, the cavities of the under side are erroneously placed on the upper side.

According to Renard, this fish reaches the length of 8 feet 7 inches; but this does not agree with the assertion of Valentyn. According to the latter, the flesh of this fish is dry and without flavour; Renard says it is similar to that of the Sturgeon. The last opinion is certainly not founded on experience, but on the analogy of this fish with the Sturgeon. I have more confidence in old Valentyn than Renard, and consequently think that the size of 8 feet is an exaggeration, and that the length given by Valentyn is the more exact.

Another species, not yet rediscovered,

PERISTETHUS BREVIFURCATUS,

is figured, according to Cuvier and Valenciennes, in Cornelius v.

Vlaming's Manuscript, nos. 165, 166. This fish is called Sturgeon of Banda, and has the fork of the snout not more largely developed than in *Trigla lyra*. Like *P. gigas*, it grows to a considerable size.

A third species is mentioned by Cuvier in few words: "Ainsi l'on doit croire qu'il y a dans la mer des Indes une espèce de ce genre différente de la nôtre." This third species of Cuvier is perhaps *P. orientalis*, or my new *P. Rieffeli*.

GEOLOGICAL SOCIETY.

December 14, 1859.—Prof. J. Phillips, President, in the Chair.

The following communications were read:—

1. "On some Remains of *Polyptychodon* from Dorking." By Prof. Owen, F.R.S., F.G.S.

Referring to the genus of Saurians which he had founded in 1841 on certain large detached teeth from the Cretaceous beds of Kent and Sussex, and which genus, in reference to the many-ridged or folded character of the enamel of those teeth, he had proposed to call *Polyptychodon*, Prof. Owen noticed the successive discoveries of portions of jaws, one showing the thecodont implantation of those teeth, which, with the shape and proportions of the teeth, led him to suspect the crocodilian affinities of *Polyptychodon*; and the subsequent discovery of bones in a Lower Greensand quarry at Hythe, which, on the hypothesis of their having belonged to *Polyptychodon*, had led him to suspect that the genus conformed to the Plesiosauroid type.

The fossils now exhibited by Mr. G. Cubitt of Denbies, consisted of part of the cranium (showing a large foramen parietale), fragments of the upper and lower jaws and teeth, of the *Polyptychodon interruptus*, from the Lower Chalk of Dorking, and afforded further evidence of the plesiosauroid affinities of the genus. Professor Owen remarked that in a collection of fossils from the Upper Greensand near Cambridge, now in the Woodwardian Museum, and in another collection of fossils from the Greensand beds near Kursk in Russia, submitted to the Professor's examination by Col. Kiprianoff, there are teeth of *Polyptychodon*, associated with plesiosauroid vertebræ of the same proportional magnitude, and with portions of large limb-bones, without medullary cavity, and of plesiosauroid shape.

Thus the evidence at present obtained respecting this huge, but hitherto problematical, carnivorous Saurian of the Cretaceous period seemed to prove it to be a marine one, more closely adhering to the prevailing type of the Sea-lizards of the great mesozoic epoch, then drawing to its close, than to the *Mosasaurus* of the Upper Chalk, which, by its vertebral, palatal, and dental characters, seemed to foreshadow the Saurian type to follow.

Prof. Owen exhibited also drawings of specimens in the Woodwardian Museum and in the Collection of Mr. W. Harris, of Charing, which show the mode and degree of use or abrasion to which the teeth of *Polyptychodon* had been subject.